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PATENT SPECIFICATION

Application Date: March 3, 1941. No. 2826/41. 547,104

Complete Specification Left: March 3, 1942.

Complete Specification Accepted: Aug. 13, 1942.

PROVISIONAL SPECIFICATION

Improvements in and relating to Valves for Bibcocks and the like

I, JOHN ALFRED COCKETT, of 14, Inverness Drive, Hainault, Ilford, Essex, a British Subject, do hereby declare the nature of this invention to be as follows:—

This invention relates to valves for bibcocks, and the like. In general, bibcocks are provided with loose valves fitted with washers usually composed of leather or rubber, and these washers wear and spread undesirably quickly and often seat badly thus resulting in a bibcock leaking and involving repeated replacements of washers. The object of this invention is to provide a valve suitable for bibcocks and the like in which the seating engaging part of the valve is composed of a very durable material and is restrained against spreading. Another object of this invention is to provide an all metal valve which will seat firmly and smoothly in the sealing position and will wear practically indefinitely.

According to this invention a valve for a bibcock or the like is characterised in that the seating engaging element is an annular member of highly durable material enclosed within a metal band encircling the periphery of the customary flange of the spigot adapted to fit loosely in the threaded valve stem or cock spindle whereby the said annular member is restrained against spreading.

In carrying one form of this invention into practice the valve comprises a spigot adapted to fit loosely within the valve stem or cock spindle and formed with an integral flange. In usual practice this flange has on the side remote from the spigot a threaded boss on which a washer is fitted or it receives a screw for holding the washer in position. In the present invention this underside of the said flange is formed with an integral concentric tube or hollow boss open at its free end and provided with a plurality of apertures for the free escape of water therethrough. Fitted closely about this tube or boss is a soft metal annular ring, e.g. composed of lead, and this ring abuts against the said flange and is of the same diameter as said flange. The apertured part of the said tube extends beyond this ring as an easy fit in the inlet of the bibcock so that the ring abuts against the usual annular seating at the inner end of the inlet.

To prevent this soft metal ring from expanding by the pressure applied to it when the valve is closed a brass or other suitable metal or alloy band is fitted closely but loosely about the peripheries of the said ring and flange, the axial dimension of this band being about equal to the combined thicknesses of the flange and soft metal ring. The said ring is firmly gripped in the band and thus held in position against the flange and prevented from spreading.

The valve is not necessarily limited for use with the customary domestic type of bibcock as it is adaptable for many purposes where a close seating and very durable valve is desirable, e.g. in petrol taps, compressed air lines and gas conduits and containers. The said ring is readily replaceable and the life of the valve is practically indefinite and there are no threaded parts in the valve liable to seize up or to be rendered unserviceable by corrosion.

Dated this 3rd day of March, 1941.
RAYNER & CO.,
Bank Chambers,
29, Southampton Buildings,
Chancery Lane, London, W.C.2,
Agents for the Applicants.

COMPLETE SPECIFICATION

Improvements in and relating to Valves for Bibcocks and the like

I, JOHN ALFRED COCKETT, a British Subject, of 14, Inverness Drive, Hainault, Ilford, Essex, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to valves for

bibcocks, and the like. In general, bibcocks are provided with loose valves fitted with washers usually composed of leather or rubber, and these washers wear and spread undesirably quickly and often seat badly thus resulting in a bibcock leaking and involving repeated replacements of washers. The object of this invention is to provide a valve suitable for bibcocks and the like in which the seating engaging part of the valve is positively restrained against both outward and inward radial spreading, and also is restrained from being bulged in the axial direction between its periphery and centre. It has been proposed heretofore to fit a cylindrical ring around a rubber or like washer, which ring is also a sliding fit over the disc of a jumper or valve member fitted to the usual screw stem of a cock or valve. Also it has been proposed heretofore to fit a metal collar around the washer of a jumper or valve member in which one rim of the ring abuts against the base of the disc of the jumper or valve member. However if the washer is simply a disc centrally apertured to fit over the well known screwed centre boss of the valve member there is inevitably an inner area of the washer which does not receive axial pressure against the seating when the valve is down and consequently this inner area bulges or becomes distorted and further undesirably yields to the compression or displacement of the seating engaging part of the washer. The object of this invention is to provide a construction of valve for a bibcock or the like which whilst affording a close sealing action ensures that the actual seating engaging member is when down or in the sealing position substantially wholly enclosed by non-yielding walls.

According to this invention a valve for a bibcock or the like comprises a washer in the form of an annular ring of durable material having an inner diameter not less than the inner diameter of the seating for the valve and fitted closely about a concentric tubular member having a sliding fit in the inlet side of the seating and extending from a flange member of the valve against which abuts the annular side of the washer remote from the seating engaging side, the periphery of said washer and of said flange being closely encircled by a loose band which in common with the said tubular member does not yield to radial spreading of the washer, the said concentric tubular member being ported for the flow of fluid through it when the valve is opened.

In order that this invention may be clearly understood and readily carried into effect drawings are appended hereto illustrating an embodiment thereof and wherein,

Figs. 1 and 2 are sectional elevations of a bibcock showing the valve in the closed and open positions respectively.

Fig. 3 is a side elevation view of the valve, and

Fig. 4 is an exploded view of the valve in perspective.

Referring to the drawings the valve comprises a spigot 1 which fits loosely in the valve stem or cock spindle 2 and is formed with an integral flange 3. Instead of the usual practice of forming a depending threaded boss on this flange to receive a washer, in the present device the underside of this flange is formed with an integral concentric tube or hollow boss 4 open at its free end and provided with a plurality of apertures 5 for the free escape of water therethrough. Fitted closely about this tube or boss is a washer in the form of a soft metal annular ring 6, e.g. composed of lead, and this ring abuts against the said flange and is of the same diameter as said flange. The apertured part of the said tube 4 extends beyond this ring as an easy fit in the inlet 7 of the bibcock so that the ring abuts against the usual annular seating 8 at the inner end of the inlet.

To prevent this soft metal ring 6 from spreading by the pressure applied to it when the valve is closed, a brass or other suitable metal or alloy band 9 is fitted frictionally closely about the peripheries of the said ring 6 and flange 3, the axial dimension of this band being about equal to the combined thicknesses of the flange and soft metal ring. The said ring 6 is firmly gripped in the band 9 and thus held in position against the flange and prevented from spreading.

The valve is not necessarily limited for use with the customary domestic type of bibcock as it is adaptable for many purposes where a close sealing and very durable valve is desirable, e.g. in petrol taps, compressed air lines and gas conduits and containers. The said ring is readily replaceable and the life of the valve is practically indefinite and there are no threaded parts in the valve liable to seize up or to be rendered unserviceable by corrosion.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A valve for a bibcock or the like fluid flow controlling device comprising a washer in the form of an annular ring of durable material having an inner diameter not less than the inner diameter of the

seating for the valve and fitted closely about a concentric tubular member having a sliding fit in the inlet side of the seating and extending from a flange member of the valve against which abuts the annular side of the washer remote from the seating engaging side, the periphery of said washer and of said flange being closely encircled by a loose band which in common with the said tubular member does not yield to radial spreading of the washer, the said concentric tubular member being ported for the flow of fluid through it when the valve is opened.

2. A valve for a bibcock or the like fluid flow controlling device substantially as described with reference to the accompanying drawings.

Dated the 3rd day of March, 1942.
RAYNER & CO.,
Bank Chambers,
29, Southampton Buildings,
Chancery Lane, London, W.C.2,
Agents for the Applicant.

Leamington Spa: Printed for His Majesty's Stationery Office, by the Courier Press.—1942.

Fig.1.

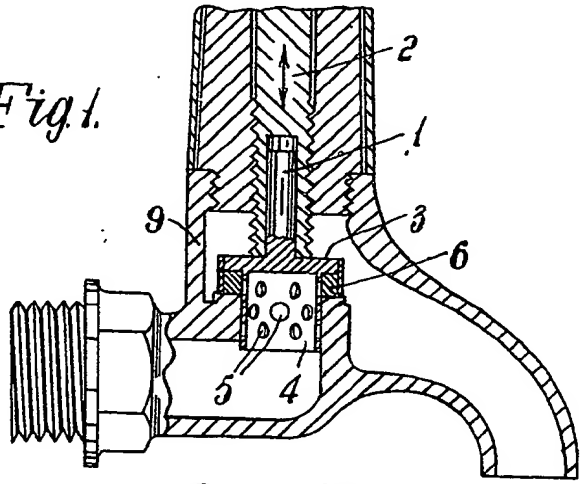


Fig.2.

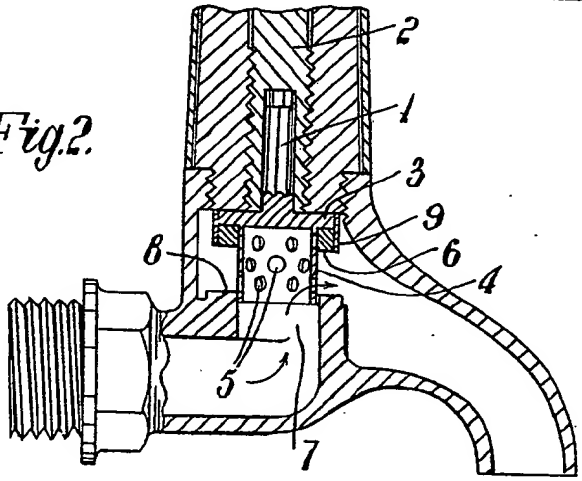
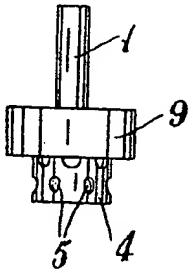


Fig.3.



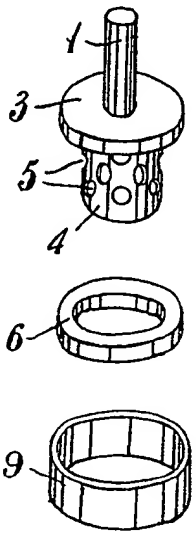


Fig.4.

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[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

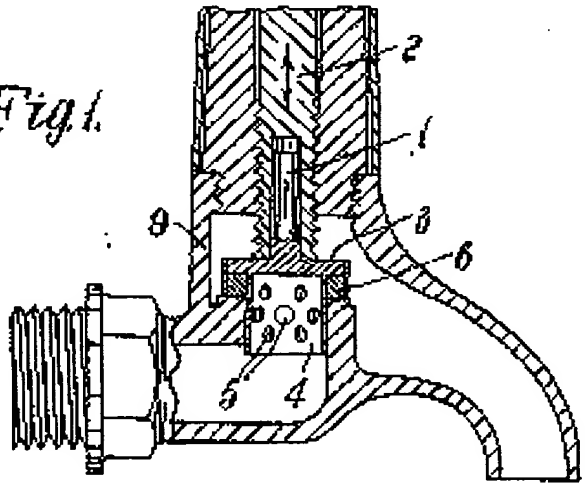


Fig. 2.

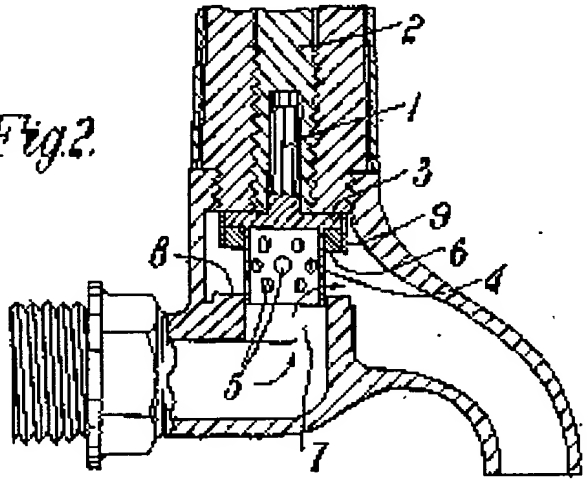
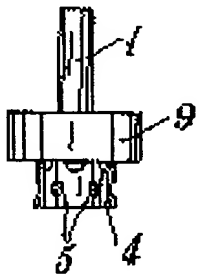


Fig. 3.



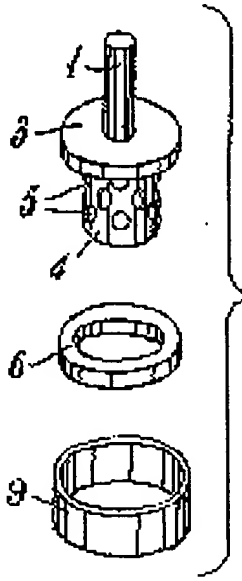


Fig. 4.

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